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Article 34

"COMPOSITE MATERIAL AND USE THEREOF"

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TECHNICAL FIELD

The present invention relates to a composite material which is particularly suitable for being used in footwear manufacturing, specifically for cork soles and/or vamps and/or toes production, as well as for other applications such as spectacle-cases or the like, panellings, suitcases or leather-goods, or chairs or sofas components.

The invention is mainly applied in the fields of footwear industry or in the manufacturing of natural leather or hides, as well as in the manufacturing of furnishing elements.

BACKGROUND ART

Footwear cork soles are usually obtained from sheet or roll supporting materials, which are generally constituted by cellulosic material or regenerated leather.

Said material represents the cork sole support, and a mixture of resins together with a suitable dyestuff is sprayed or spreaded on one side of said material in a suitable industrial plant.

Thereafter, if necessary, the treated surface of the supporting sheets undergoes an embossing operation; finally, said surface is then treated with a paint layer, usually a nitro paint.

Said manufacturing method, as well as the material obtained therewith, involve some disadvantages and drawbacks, among which a low surface resistance of the treated layer, and relatively high production costs can be

principally mentioned.

Document GB-A-1,514,224 deals with multilayer composites which simulate leather and are used in all areas where real leather is generally used, such as upholstery, 5 apparel, handbags, luggage and footwear.

Said multilayer composites are constituted by three essential components: a) textile fabrics which act as supporting substrates; b) crushed foam; c) a surface finish film.

10 Document DE-A-3,220,768 deals with a process for coupling a TNT substrate to a PVC or PU or PE layer, said TNT substrate being drenched with a polyester resin.

15 Document DE-A-1,654,451 deals with a process for the production of artificial or simulated leather obtained by coupling a foamed polyurethane to a synthetic layer, e.g. PVC, PE, PP, PA, polyester.

20 Document GB-A-1,536,421 deals with flexible laminates comprising a first outer layer made of a thermoplastic material: a first backing layer for the first outer layer which is constituted by paper or thin cardboard or woven and non-woven cloth; a second outer layer made of a polymeric material and the backing layer of said second outer layer which is, for example, cardboard, or woven or non-woven textile material.

25 Document FR-A-2,388,659 deals with the application of a coating made of synthetic resin to a PE foam.

DESCRIPTION OF THE INVENTION

30 The present invention aims to give a simple and economic solution to the above-mentioned problems and, thus, to provide for a composite material provided with a high surface resistance, thus being particularly suitable for a plurality of applications, such as footwear cork soles or toes, and also parts of suitcases, brief-cases, spectacle-

cases, chairs components or structures, etc., as well as for recycling and regenerating stocks of leather materials, said composite material being non-toxic and thus usable for contacting the skin also for a long period of time.

5 This is obtained by means of the features disclosed in the main claim.

The dependent claims outline particularly advantageous forms of embodiment of the composite material according to the invention.

10 Furthermore, claim 4 discloses the use of said composite material.

According to the present invention, the composite material is constituted by a suitable supporting material, available in sheets or rolls, to which a polyethylene or

15 Surlyn® covering layer is applied, said covering layer being advantageously constituted by a thin film.

Said supporting material is constituted by a material selected from the group comprising:

- cellulosic material in sheets or rolls (for instance Bontex® or Texon®);
- a mixture of leather regenerated materials or derivatives thereof (for instance Salpa);
- natural leather even from stock;
- cork or wood;
- 25 - coagulated materials;
- felt;
- a perspiring material such as Goretex® or Simpatex®.

The coupling of the supporting material with the covering layer can be obtained with a cold-working, for instance interposing a suitable double adhesive film between the supporting material and the film made of polyethylene or Surlyn®, or by means of a sprayed or spread adhesive;

alternatively, the coupling of the film can be obtained with a hot-working.

Furthermore, the composite material, which is obtained by coupling the polyethylene or Surlyn® covering layer with 5 the supporting material, is embossed during the coupling operation.

The embossed composite material according to the present invention is non-toxic and presents extraordinary 10 mechanical properties, for instance a very high surface resistance to abrasion or scraping.

Furthermore, according to a form of embodiment, a wool layer or a net is placed over the covering layer.

Besides, a dyestuff layer (physical or sublimatic) can be interposed between the supporting material and the 15 transparent polyethylene or Surlyn® covering layer.

Following to the coupling operation, the resultant composite material may immediately be cut so as to obtain the desired shapes, for instance cork soles or other 20 footwear elements (heels or toes), or wall-paper sheets, suitcase elements, furniture articles, etc.

In this context, it is useful to remark that the composite material according to the invention includes a polyethylene surface layer, which makes it non-toxic and it may freely be used in any applications which come into 25 contact with the human skin, which operation is not possible, for instance, with known composite materials having surface layers made of polyvinylchloride PVC.

As mentioned above, the composite material according to the present invention has a very high surface resistance and 30 can be used in many applications, above all in the footwear field.

In fact, tests demonstrated that this material is particularly suitable for manufacturing cork soles, which

show higher mechanical resistance than those which are typical of the known cork soles, having a paint surface layer; other interesting applications are those concerning the manufacturing of heels or toes or vamps.

5 In this context it is appropriate to note that, in the case where the supporting material is a leather, the application of the polyethylene surface layer gives stability to the supporting material surface, thereby preventing the formation of ashlar, concavities, etc.

10 According to a further form of embodiment of the invention, the supporting material can be sprayed with a leather-like scent prior to embossing. In this case the resulting material cannot be distinguished from real leather any more.

15 Concerning the manufacturing of suitcases and/or brief-cases and/or spectacle-cases or the like, as well as of other natural leather goods, other applications have demonstrated the absolute reliability of the material according to the invention.

20 Furthermore, the material according to the invention may advantageously be applied to the production of chairs or sofas elements or structures.

According to a particular form of embodiment of the material according to the invention, the material itself is 25 provided with a series of perforations or microperforations, which are usually carried out on the sheet or roll before the final cutting according to a predetermined shape or simultaneously to the embossing operation.

30 In this case the composite material has shown a particular effectiveness in being used as cork sole, since it allows a membrane made of unidirectional transparent material to be arranged between the cork sole and the sole of a footwear, thereby maintaining the foot always dry.

Moreover, the film provided with perforations can be coupled by means of hot-working with a material of the impermeable perspiring type, for instance Goretex® or Simpatex®.

5 A coupling of this type is particularly advantageous since it avoids the perspiring material to be joined to its carrier in a spot-like fashion, as it normally happens according to the known methods.